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EXAMINER

STEPHANY, TIMOTHY J

ART UNIT	PAPER NUMBER
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2622

DATE MAILED: 03/04/2004

5

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/538,483

**Applicant(s)**

IIDA, MASARU

**Examiner**

Timothy J. Stephany

**Art Unit**

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 30 March 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

The disclosure is objected to because of the following informalities:

On page 4, line 18, typographical error "own in Fig. 1" should read "shown in Fig. 1".

On page 9, line 25, grammatical error "C is referred to as" should read "C are referred to as".

On page 18, lines 15-16, the phrase "for generation of a monochrome image" is redundant and should be removed.

Appropriate correction is required.

### ***Drawings***

The drawings are objected to because the reference character **1021** (page 3, line 19) is not shown in Fig. 1. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 8, 19 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The use of the word "signal" followed by the use of the word "signals" is not specifically apparent. Additional information showing how the signal becomes signals is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1, 8, 9, 11, 13 and 18-20** are rejected under 35 U.S.C. 102(e) as being anticipated by Shu ('885). Shu discloses an apparatus (and thereby a method) whereby a halftone operation is performed on one color component, that is itself dependent upon another color component (col. 8, lines 1-3), through the computer which is shown as element 24 in Figure 3. The halftone operation is equivalent to the amended signal for generation of a monochrome image in claim 1, and the dependence between color

components is equivalent to the use of image data from another monochrome image in claim 1. Shu also is speaking of ink-jet printing and color-ink printing with a cartridge (abstract), whereby in this case the printer is the image generation unit and when the halftone-modified color components are printed, they are overlapped to create a multi-color image, as is required by claim 1. Thus Shu comprises all elements present in claim 1 of the pending application. This is also the justification for the rejection of claims **8, 9 and 18-20**.

Regarding **claim 11**, the elements for each signal that are then used in forming a multi-color image and that these signals are amended by the same rule is shown in Figure 7, where the C, M, and Y color signals are each modified by the signal U to attain the output for the reproduction device (C', M', Y').

Regarding **claim 13**, it is inherent that any processing step(s) that are reversible in theory can be reversed, and thus the amending and unamending of a signal is here paralleled with the half-toning process that can be de-screened as a matter of convention (reference de-screening method in Roetling ('125), col. 3, lines 34-35).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 2, 3, 10, and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shu in view of Hibi ('311).

Regarding **claims 2, 3, 10 and 12**, Shu discloses the apparatus discussed above in the 102 rejections for claims 1 and 9, but fails to teach of a means for amending based upon color and arrangement of pixels. In analogous art, Hibi adds a method of processing an image based upon the color and placement of pixels (col. 5, lines 34-36) and that these form an image forming apparatus containing multi-colors (col. 5, lines 32-35), which comprises all elements present in claims 2 and 10 of the pending application. In addition, Hibi states that color letters can be changed in regards to exaggeration of sharpness (col. 5, lines 44-47), which is a definite example of claims 3 and 12 in the pending application.

Given the similarity of the Shu and Hibi art in their structure, function and application to image processing and printing methods, it would have been obvious to those of ordinary skill in the art at or before the time of the invention by the applicant to envisage an apparatus and method to process monochrome color planes based upon data from another color plane, that the color and placement could determine the processing done, and that changes to the pixels, based upon the combined teachings of Shu and Hibi.

**Claims 4 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shu in view of Hibi ('311), in further view of Ancin ('468).

Regarding **claim 4 and 14**, Shu and Hibi disclose the apparatus discussed above in the 102 rejections for claims 1 and 9, but fail to teach an apparatus whereby partial image data is extracted and that processing is determined by its content. In analogous art, Ancin adds that black text data can be extracted (col. 9, lines 35-36) and processed independently of the color text (col. 11, lines 12-15), the apparatus being shown in Figure 3. The black text corresponds to the partial image. That the color data can be processed according to the black content was already shown by Hibi (col. 5, lines 34-36).

Given the similarity of the Shu, Hibi and Ancin art in their structure, function and application to image processing and printing methods, it would have been obvious to those of ordinary skill in the art at or before the time of the invention by the applicant to envisage an apparatus and method to extract and process specific pixel regions, based upon the combined teachings of Shu and Hibi with Ancin.

**Claims 5 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shu in view of Hibi ('311), in further view of Yoshino ('462).

Shu and Hibi disclose the apparatus discussed above in the 102 rejections for claims 1 and 9, but fail to teach an apparatus that extracts the partial image data containing a pixel and pixels around ("around" taken to mean "in the vicinity" (spec. page 18, line 7)) that pixel. Yoshino adds that in the process of extracting adjoining image parts, the pixel values of the adjoining pixels that are the eight nearest-neighbors

are extracted for comparison, and the apparatus is shown in Figure 1 as element **52** (Adjoining Relationship Extracting Means).

Given the similarity of the Shu and Hibi art in their structure, function and application to image processing and printing methods, in addition to Yoshino's processing steps suitable and directed for printing applications (regarding densities and trapping process, see abstract), it would have been obvious to those of ordinary skill in the art at or before the time of the invention by the applicant to envisage an apparatus and process that extracts the partial image data containing a pixel and pixels around that pixel, based upon the combined teachings of Shu and Hibi with Yoshino.

**Claims 6 and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shu in view of Hibi ('311), in further view of Ikeda ('807).

Shu and Hibi disclose the apparatus discussed above in the 102 rejections for claims 1 and 9, but fail to teach an apparatus for selection of a signal to generate a monochrome image. Ikeda adds that there is a CPU that controls the color (signal) selection (col. 7, lines 33-35) through the selector **123** in Figure 9A-1 and generation of a monochrome image is performed (col. 7, lines 35-38) through the registers shown in Figure 9A-1 as elements **105**, **107** and **108** and amended through the selector **123** to the output.

Given the similarity of the Shu, Hibi and Ikeda art in their structure, function and application to image processing and printing methods, and specifically as Shu and Ikeda relate to half-tone processing, it would have been obvious to those of ordinary

skill in the art at or before the time of the invention by the applicant to envisage an apparatus and method for selection of a signal to generate a monochrome image, based upon the combined teachings of Shu and Hibi with Ikeda.

**Claim 7 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shu in view of Hibi ('311), in further view of Hattori ('560).

Shu and Hibi disclose the apparatus discussed above in the 102 rejections for claims 1 and 9, but fail to teach the generation of a black monochrome image from the signal from another color. Hattori adds that the a black adding process for generating image data of black is based on the density data of the three colors R, G, and B (col. 10, lines 24-26), which occurs in the image signal processor (col. 10, line 4) shown as element **20** in Figure 1.

Given the similarity of the Shu, Hibi and Hattori art in their structure, function and application to image processing and printing methods, it would have been obvious to those of ordinary skill in the art at or before the time of the invention by the applicant to envisage an apparatus and method for the generation of a black monochrome image from the signal from another color, based upon the combined teachings of Shu and Hibi with Hattori.

***Additional Notes***

Prior art references Roetling ('125), Zeng ('039), Eschbach ('470), Kojima ('432), Matsukubo ('141), Mitsuse ('828), Kobayashi ('425), Matsumoto ('998), Lund ('793), Overton ('495), Knox ('764), Hel-or ('918), Hel-or ('503), Le ('942), Economidis ('364), Cianciosi ('175), Sousa ('636), Whittaker ('795), Hirota ('120) and non-patent reference are only included as background sources and were not used in the determination of the validity of the claims contained in the pending application of this office action.


Roetling provides background on reversible processing, Zeng ('039), Eschbach ('470), Kojima ('432), Matsukubo ('141), Mitsuse ('828), Kobayashi ('425), Matsumoto ('998), Lund ('793), Overton ('495) relate to solving the same problem as the subject of this office action; Knox refers to the generation of monochrome images from other color separations, Hel-or ('918) and Hel-or ('503) refer to color artifacts due to edge smoothing, Le and Economidis refer to smoothing of separate color components, Cianciosi refers to smoothing and trapping, Sousa refers to smoothing of adjacent colors, Whittaker refers to pixel extraction, Hirota refers to generating a black signal, Ishiguro (US 2003/0048958 A1) refers to smoothing so as not to change pixel tone, and Nou (US 2003/0026496 A1) refers to pixel extraction.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Stephany whose telephone number is 703-305-8951. The examiner can normally be reached on 8:30 am - 4:30 pm ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on 703-305-4712. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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